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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,510	08/29/2001	Hiromichi Takemura	Q66035	5221

7590 03/23/2005

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EXAMINER	
CRAIG, DWIN M	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,510	TAKEMURA ET AL.	
	Examiner	Art Unit	
	Dwin M Craig	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12-13-04, 11-28-01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 have been presented for Examination. Claims 1-28 have been Examined and rejected.

Priority

2. The Examiner acknowledges the Applicant's claim to Japanese Laid Open Patent Application 2000-259767 filed on 29 August 2000 and Japanese Laid Open Patent Application 2000-364427 filed on 30 November 2000.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claims 1-4 and 26-27** are rejected under 35 U.S.C. 101 for lacking utility.

3.1 As regards independent **Claim 1**, the Examiner respectfully asserts that Applicant's current claim language fails to be directed towards statutory subject matter. Independent **Claim 1** is currently disclosing a method predicting the life of a rolling bearing, which could be determined by *a person as a mental step using a pencil and paper*. The current language of the claim(s) raises a question as to whether the claim(s) are directed to an abstract idea or to a practical application producing a concrete, useful and tangible result. If the claim language were directed towards using a computer to predict the life of a rolling bearing, then the claimed subject matter would be statutory.

It is noted by the Examiner that Applicant's specification discloses a method of using a *computer* to determine the life of a rolling bearing. Dependent **Claims 2 and 3** inherit the

deficiencies of independent **Claim 1** in regards to not being directed towards statutory subject matter.

3.2 As regards independent **Claims 26 & 27** the Examiner respectfully asserts that **Claims 26 and 27** are rejected under **35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

Claims 26 and 27 recite a computer program product. It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer that, *when executed*, instructs the computer to perform various functions.

From the MPEP: Chapter 700, Patentable Subject Matter—Computer-related Inventions:

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

The following claim is a generic example of a proper computer program product claim;

A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to perform the following:

Function A
Function B
Function C, etc...

Amendment is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Dependent **Claim 2** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. When evaluating a mathematical function, the determination for a variable cannot depend upon evaluating the function using that same variable as in *"input"* to that same function.

For Example, $\underline{a_c} = g(a_m, \underline{a_c})$ cannot be evaluated.

Correction and Amendment are required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Dependent **Claim 2** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5.1 As regards dependent **Claim 2** it is unclear to the Examiner how the determination of the value of the variable a_c can be determined from a function that requires as it's input that same variable, $\underline{a_c} = g(a_m, \underline{a_c})$.

Correction and Amendment are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Independent **Claims 1, 4, 26 and 27** and dependent **Claims 5-10, 112-17 and 18-25 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **"Evaluation of Antifriction Bearing Lubrication Methods on Motor Life-Cycle Cost"** by Mark M. Hodowanec, hereafter referred to as the *Hodowanec* reference in view of **U.S. Patent 6,328,477 Tsujimoto et al.** and in further view of **U.S. Patent 4,438,203 Wohltjen et al.** and in further view of ***"Official Notice"***.

6.1 As regards independent **Claims 1, 4, 26 and 27** the *Hodowanec* reference discloses, *a method of predicting a life of a rolling bearing having a specification* **(Abstract and text page 1247),** *a basic dynamic load rating C, dynamic equivalent load is P, a load index p,*

and a corrected life L_A of the rolling bearing at a certain reliability coefficient a_1 calculated by $L_A = a_1 \cdot a_{NSK} \cdot (C/P)^p$ **("Adjusted Bearing Life Equation" page 1247)** and a life adjustment factor for operating conditions (primarily influenced by the bearing lubrication) a_3 **(Page 1247).**

However, the *Hodowanec* reference does not expressly disclose the formula for determining the Bearing Life Adjustment due to lubrication contamination. The *Hodowanec* reference does disclose that lubricant contamination will result in a decrease in the service life of the bearings **(page 1248).** Thus, an artisan of ordinary skill would have been motivated to search the bearing lubrication art to find a methodology to model the effects of contaminated lubricant because of the adverse effect contaminated lubricant can have on the life of a bearing.

The *Tsujimoto et al.* reference discloses empirical data to determine the effects of contamination on the life of rolling bearings **(Col. 8 Lines 14-42, Col. 14 Table 1)** and the *Wohltjen et al.* reference discloses a *judging means* **(Figure 1).**

It would have been obvious, to one of ordinary skill in the rolling bearing lubrication art, at the time the invention, was made to have combined the teachings of the *Hodowanec* reference with the *Tsujimoto et al.* reference, and to also use the *judging means* of the *Wohltjen et al.* reference to have generated the claimed equation in Applicant's first independent claim, *or the functional equivalent thereof,* because, *the evaluation of lubricant stability is very important for designers, producers and users of lubricants* and *clearly the existing techniques are inadequate if automation of the evaluation process is desired* **(Wohltjen et al. Col. 1 lines 8-37).**

6.2 As regards dependent **Claims 5-10, 12-17, 18-25 and 28** the *Hodowanec* reference discloses life calculations influenced by heat and material considerations in regards to

the lubrication **(pages 1248-1250),** *further, "Official Notice"* it would have been obvious to use computers to model and determine these calculations.

6.3 As regards dependent **Claims 19-21** *"Official Notice"* it is further noted that use of the internet would have been obvious at the time of Applicant's invention.

Allowable Subject Matter

7. Dependent **Claims 2 and 3** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Claims 1-28 have been presented for Examination. Claims 1-28 have been rejected. This Office Action is **Non-Final.**

8.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in PTO form 892 accompanying this Office Action disclose the state of the art concerning Rolling Bearing Life Calculations.

8.2 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (571)272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER